Abstract

A coplanar waveguide feed pentagonal shape band-notched monopole antenna is proposed for multi-wideband operation. To avoid the potential interference of existing narrow bands with ultrawideband, the open ended slots embedded in monopole radiating surface and thin ground plane are used as notch filter centered at 3.5 GHz and 7.5 GHz respectively. The open circuit semi-spirally extended thin ground plane is designed for rejection of the band centered at 5.2 GHz. The Bandwidth is enhanced by suppressing the spurious notch band. The four operating bands developed due to the insertion of three notch bands, have -10 dB impedance bandwidth of 594 MHz (2.714-3.308 GHz), 990 MHz (3.952-4.942 GHz), 1.12 GHz (5.964-7.088 GHz) and 3.1 GHz (8.25-11.35 GHz) respectively. Group delay less than 1ns across all operating bands show good signal integrity. The radiation patterns in the H-plane are omnidirectional with low cross polarization levels and bidirectional in the E-plane. The simulated and measured results are in good agreement.


Index Terms

Computer Science Wireless

Keywords

Pentagon, full band, multi-wideband, notch filter, open ended slot.